

# **Quarterly Progress Report #1**

For the project entitled:

## **Comparative Analysis of Coarse Surfacing Aggregate Using Micro-Deval, L.A. Abrasion and Sulfate Soundness Tests**

*Reporting Period: September 9, 2005 – December 31, 2005  
(First and Second Quarter of State Fiscal Year 2006)*

Submitted by:

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Submitted to:

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**Task 0: Project Management**

During this quarter, Eli Cuelho and Bob Mokwa oversaw the various tasks associated with the project through frequent meetings with one another and a student (Keely Obert) working on the project. A kick-off meeting for the project was held on September 22, 2005 at Montana State University to review the project objectives, trade information regarding the laboratory tests that have already been conducted, and to discuss the types and amounts of soils needed to complete the remaining tests. Additionally, the Micro-Deval test apparatus was delivered to the Montana State University campus to be able to complete those tests. The project is generally on budget and on schedule.

**Task 1: Conduct Literature Review**

Literature related to the toughness and durability testing of course surfacing aggregates is being collected as part of this task. Information regarding the history and performance of the Micro-Deval, L.A. Abrasion and Sulfate Soundness tests is being collected and summarized. In particular, the results of other comparable research projects are being reviewed and included in this review. An outline for this review will be created next quarter to facilitate the write-up that will be included in the final report.

Action Items for next quarter:

- Continue to collect and synthesize relevant literature
- Create outline and preliminary write-up of literature review

**Task 2: Materials Testing**

During this quarter, eleven soil samples were tested using the Micro-Deval test apparatus. Each test is repeated five times for a total of 55 individual Micro-Deval tests. L.A. Abrasion tests were also conducted. Shortages in some of the material prevented us from completing all of the L.A. Abrasion tests; however, MDT is collecting additional material so that at least five L.A. Abrasion tests can be conducted on each soil type. Available gradation and sulfate soundness results were collected from MDT by WTI. Additional results from tests completed by MDT will be collected and input into the project database.

Action Items for Next Quarter:

- Continue Micro-Deval testing
- Continue L.A. Abrasion testing
- Collect additional soil samples
- Collect sulfate-soundness results from MDT

**Task 3: Analysis and Synthesis of Results**

An electronic database was created to store data from each of the laboratory tests run on the various soil samples. Basic statistics is being used to quantify variance between tests and to compare the results between the different tests. This analysis will continue to develop as additional results are added.

**Task 4: Reporting****Quarterly Progress Reports****Action Items for Next Quarter:**

- Progress report for third quarter of state fiscal year 2006

**Final Report**

Work on the final report has not yet begun.

**Summary of Expenditures**

The table below summarizes the expenditures on this project through December 31, 2005. Expenditures during the first and second quarter were \$2,742.76, leaving \$20,581.24 for the remainder of the project.

<b>Budget Category</b>	<b>Budgeted Funds</b>	<b>Spent This Period</b>	<b>Total Spent</b>	<b>Total Remaining</b>
Salaries	\$11,445.00	\$774.28	\$774.28	\$10,670.72
Benefits	\$3,323.00	\$249.94	\$249.94	\$3,073.06
In-State Travel	\$150.00	\$0.00	\$0.00	\$150.00
Out-of-State Travel	\$0.00	\$0.00	\$0.00	\$0.00
Expendable Supplies	\$150.00	\$0.00	\$0.00	\$150.00
Tuition	\$0.00	\$0.00	\$0.00	\$0.00
Subcontracts	\$0.00	\$0.00	\$0.00	\$0.00
MDT Direct Costs	\$15,068.00	\$1,024.22	\$1,024.22	\$14,043.78
Overhead	\$3,014.00	\$204.86	\$204.86	\$2,809.14
MDT Share	\$18,082.00	\$1,229.08	\$1,229.08	\$16,852.92
WTI/MSU Share (Salaries & Benefits)	\$5,242.00	\$1,513.68	\$1,513.68	\$3,728.32
<b>Total</b>	<b>\$23,324.00</b>	<b>\$2,742.76</b>	<b>\$2,742.76</b>	<b>\$20,581.24</b>

### Project Schedule Summary

An updated summary of the project schedule is shown in figure following. It generally shows that the project is on schedule with anticipated forecasts.

